Statement of Bob Greco, API Group Director for Upstream and Industry Operations, before the House Government Reform Subcommittee on Energy and Resources

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I am Bob Greco, Group Director for Upstream and Industry Operations for API, the national trade association of the U.S. oil and natural gas industry. API represents more than 400 companies involved in all aspects of the oil and natural gas industry, including exploration and production, refining, marketing and transportation, as well as service companies that support our industry. We appreciate this opportunity to discuss the oil and natural gas industry's hurricane preparedness.

I. INTRODUCTION: RESPONDING TO HURRICANES KASTRINA AND RITA

During and following last year's hurricanes, API and the U.S. oil and natural gas industry worked closely with federal agencies, including the Department of Energy, the Department of Transportation, the Department of Homeland Security, the Minerals Management Service, the Environmental Protection Agency, the Coast Guard and others. We want to thank these agencies for their cooperation and support, as we work together to learn further from last year's experiences and continue to prepare for this year's hurricane season.

The Gulf of Mexico provides 30 percent of the oil and 21 percent of the natural gas used by the United States. According to Minerals and Management Service (MMS) Regional Director Chris Oynes, "The overall damage caused by Hurricanes Rita and Katrina has

shown them to be the greatest natural disasters to oil and gas development in the history of the Gulf of Mexico."

Based on DOE data, at the peak, about 29 percent of U.S. refining capacity was shut down as a result of Katrina and Rita. As of May 31, only 3.3 percent of U.S. refining capacity was not yet fully operational. According to the Minerals Management Service (MMS), about 30 percent of U.S. oil production and about 21 percent of U.S. natural gas production was shut down by the hurricanes. As of May 31, less than 7 percent of U.S. oil production and less than 3 percent of U.S. natural gas production remained shut-in. MMS estimates 3,050 of the 4,000 platforms and 22,000 of the 33,000 miles of pipelines in the Gulf were in the direct paths of the storms. Together they destroyed 115 platforms and damaged 52 others.

Nevertheless, during three major hurricanes in the Gulf of Mexico – Ivan, Katrina and Rita – including two back-to-back Category 5 hurricanes, featuring 200 miles-per-hour winds and seas of up to 100 feet and all within 13 months – no lives were lost and no significant offshore exploration and production releases occurred.

The hurricanes, however, created isolated oil spills in certain locations of the impacted onshore areas. Those facilities that suffered sufficient hurricane damage to cause a spill made every effort to cooperate with federal and state agencies to ensure that a rapid and thorough response was carried out. In addition, these spill incidents are being analyzed

closely to identify and make any changes that could prevent them from happening again should another major hurricane event occur.

The Gulf Coast region includes some 4,000 offshore platforms in federal waters, major refineries, and hundreds of production, transportation and marketing facilities. There is a reason for this geographic concentration in a high-risk weather area. Government policies have largely limited offshore exploration and production to the Central and Western Gulf – and our onshore facilities, including refineries, have been welcomed to communities in the region. Unfortunately, offshore oil and natural gas development has been barred elsewhere – including the eastern half of the Gulf and the entire Atlantic and Pacific Coasts. Onshore construction has been held back by government restrictions, permitting delays, and not-in-my-backyard or NIMBY sentiments.

It is ironic that we talk so much about diversifying the sources of our energy supplies from abroad, yet we have done so little to geographically diversify our oil and natural gas industry here at home. Despite the restrictions now in place, the industry has diversified sources of supply through recent pipeline projects that bring Canadian crude oil to the Gulf coast and Oklahoma. But much more diversity is needed.

We can no longer afford to place off limits vast areas of the Eastern Gulf of Mexico, off the Atlantic and Pacific coasts, and offshore Alaska. Similarly, we cannot afford to deny Americans consumers the benefits that will come from opening the Arctic National

Wildlife Refuge and from improving and expediting approval processes for developing the substantial resources on federal lands in the Mountain West.

In fact, we have an abundance of competitive domestic oil and gas resources in the U.S. According to the latest published estimates, there are 112 billion barrels of oil and 656 trillion cubic feet (Tcf) of natural gas remaining to be discovered in the United States. Consider that 112 billion barrels are enough oil to power more than 60 million cars for 60 years and heat more than 25 million homes for 60 years. And 656 Tcf is enough natural gas to heat 60 million homes for 160 years.

Much of these oil and gas resources – 78 percent of the remaining to be discovered oil and 62 percent of the gas – are expected to be found beneath federal lands and coastal waters. Federal restrictions on leasing put significant volumes of these resources off limits, while post-lease restrictions on operations effectively preclude development of both federal and non-federal resources. Addressing these restrictions is critical.

II. IMPROVING HURRICANE RESPONSE COORDINATION

At noted earlier, at its peak, 29 percent of domestic refining capacity was shut down due to Katrina and Rita. Our industry's onshore operations were safely shut down as the storms approached and then safely restarted. As quickly as humanly possible, the industry worked with government agencies to obtain the appropriate waivers of fuel standards to provide the necessary flexibility to get gasoline and diesel fuel where they were needed.

The industry also obtained Jones Act shipping waivers to enable more ships to distribute crude oil and products, as well as waivers to provide flexible hours of service requirements for drivers to help the industry get products to the marketplace with minimal supply disruptions. Finally, the industry worked with federal and state authorities and electric companies to get pipelines moving product as quickly as possible.

Subsequently, API held a two-day hurricane conference in March to discuss lessons learned and identify areas for improvement. Government participation included DOE, MMS, DHS, EPA, the Coast Guard, and state and local agencies. Our members shared their examples of ingenuity during the crisis. For example, one refinery shipped crude oil by vessel when pipelines did not have power, other refineries operated as terminals to minimize supply disruptions, and one pipeline was able to weld new piping in place to route around an out-of-service pump station.

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Many industry participants also attended a DOE-sponsored meeting in Tunica, Mississippi, and, earlier this week, API hosted a hurricane roundtable of all sectors of the oil and natural gas industry and relevant federal agencies and trade associations to further share lessons learned and to explore additional improvement opportunities for government and industry coordination.

Improved operational coordination is now underway with government agencies at all levels. Last week, API joined with DOE and MMS at a joint press conference to discuss hurricane preparedness. As we enter the hurricane season, it is critically important that

agencies communicate and coordinate to avoid duplication of hurricane-related requests to companies from multiple agencies.

It is even more critical that government, to the extent, possible, help to ensure that a high priority is given to facilitating the acquisition, transportation, and placement of emergency backup generation and restoration of commercial power to pipelines and refineries. FERC was granted new authority under the Energy Policy Act of 2005 to improve electric power reliability. FERC should be urged to exercise that authority fully and expeditiously as that could only improve the situation.

-- Inter-Agency Coordination

A key industry observation made following Hurricanes Katrina and Rita was that communication and coordination between the agencies were critical components to an efficient and effective response. The National Response Plan established an Interagency Incident Management Group (IIMG) to assist in the coordination between multiple federal and state agencies during an Incident of National Significance (IONS)—such as the two hurricanes of 2005. And while API members and the industry as a whole were not directly involved with the IIMG during last year's events, the effectiveness of this group clearly had an impact on our industry by facilitating federal and agency cooperation in responding to the hurricanes.

In the May 25, 2006 Notice of Change to the National Response Plan, the IIMG was renamed the Incident Advisory Council (IAC). This council, while similar to the IIMG,

has a slightly redefined role, and while this new group has yet to be tested, our industry hopes that coordination of multiple agency activities during an emergency response remains one of its main functions. It is essential that government – at all levels – has clearly established roles during emergency situations. To this end, we stand ready to provide input and assistance to the federal government to ensure that the IAC is as robust and as effective as possible.

For instance, a number of our companies have placed supplies (for example, generators, blankets, food, potable water, and medicine) in strategic locations throughout the country so that resources can be delivered to our impacted facilities and employees in a timely manner. As a key component of our nation's critical infrastructure, we recognize that it is imperative that operations begin running as soon as possible following a hurricane or other emergency to ensure that fuel and energy can be delivered and distributed where it is needed with minimal supply disruptions. As was evidenced during last year's hurricanes, delivery of goods and products to these facilities often proved to be quite difficult as supply convoys got stopped or delayed at checkpoints and, in some cases, were even confiscated. If the IAC is effective and there is sufficient coordination among the agencies, we can be certain that these supplies can reach their intended destinations in a timely manner so that the facilities can be brought back into operation in an expeditious manner.

-- Company Liaison with Local Officials

Oil and natural gas companies use as their primary response mechanism the National Incident Management Systems/Incident Command System (NIMS/ICS). NIMS is a companion document to the National Response Plan (NRP), and both of these are built on the premise that incidents are typically handled at the lowest jurisdictional level. Companies continue to use NIMS and the more recent NRP as guidance documents when establishing and periodically reviewing their emergency response plans. One of the more important lessons learned following the 2005 hurricanes was that it is imperative for companies to maintain a working relationship with local and regional government officials. As a result, to prepare for this upcoming hurricane season, companies rigorously reviewed their response plans and conducted drills and exercises specifically to ensure that the liaison capability existed between the companies and local officials.

III. INDUSTRY PREPARATIONS FOR THE 2006 HURRICANE SEASON

The oil and natural gas industry continues to make significant modifications and upgrades to its Gulf of Mexico onshore and offshore operations in the aftermath of the 2005 hurricane season. Refiners did an effective job recovering and minimizing supply disruptions. Refineries had emergency response plans prepared and were able to react quickly without a single safety incident. Companies are now independently considering how they can further improve preparedness.

API has been moving on a number of fronts to identify and learn from the lessons of Hurricanes Katrina and Rita. As noted earlier, API held a well-attended, two-day hurricane conference in March to discuss lessons learned and to identify areas for

improvement, prior to the 2006 hurricane season. DOE hosted a similar conference. API, DOE and MMS held a joint press conference on May 30 to explain preparations for the 2006 hurricane season, and discussions were continued at a June 5 government-industry meeting.

Discussions to improve operational coordination are underway with government agencies at all levels. At the same time, discussions between utilities and individual companies are in progress toward ensuring priority service restoration critical to restarting operations such as refining and pipeline flows.

The industry now has more experience sharing emergency equipment. Companies are making pre-arrangements with third parties and suppliers to ensure their facilities will have access to the right resources during an emergency. Internet bulletin boards and other sites are being established to share both real-time issues and lessons learned. Moreover, emergency response and continuity-of-operation plans are being updated and employees are receiving additional training and conducting exercises and drills.

In addition, independent companies are evaluating facility hardening measures that may be appropriate for a particular facility, such as elevating certain operating units to minimize potential flood damage or strengthening utility poles.

-- Employees: the Industry’s Most Important Asset

The 2005 hurricanes reemphasized to the industry a fact that was already well known: our employees are our most important asset. In preparation for the upcoming hurricane season, API member companies have undertaken a number of activities to ensure that their employees are, first and foremost, safe during and after a hurricane, have the needed supplies and resources for survival, and, ultimately, can return to their jobs when conditions permit. Some examples of these activities include:

- The coordination of personnel evacuation plans to ensure that when employees do evacuate, the company knows where they go and can communicate with them.
- The establishment of distribution centers in areas where there is a high concentration of employees. These distribution centers contain supplies (for example, food, potable water, baby food, diapers, and medicine) that can be made available to employees in times of need.
- The identification of alternative housing arrangements (for example, purchases of recreational vehicles and establishment of long term agreements with apartment complexes and other commercial facilities) for employees who have lost their homes.
- Development of mechanisms to ensure that employees can still receive their paychecks and, when necessary, have no- or low-interest loans made available.

-- Hurricane Preparedness: Offshore

For the industry's exploration and production operations, repairs to existing infrastructure are progressing with excellent cooperation from the Minerals Management Service (MMS) and the Coast Guard. According to MMS, 22 percent of oil production and 13 percent of natural gas production in the Gulf of Mexico remains shut in. Nevertheless,

drilling activity remains at a high level and has helped offset this reduction. As of May 5, 1,624 drilling rigs were at work in the U.S., the highest level in 20 years..

A committee of operating companies, drilling contractors and trade associations has been formed to address offshore hurricane issues. The industry is moving ahead on a number of hurricane response fronts, including coordinating right-of-way priority for tankers and other vessels with the Coast Guard and undertaking fast-track review of API offshore structure design standards.

-- Performance of Offshore Rigs

While no significant offshore spills resulted from the hurricanes, the storms caused several drilling rigs to drift off location. Both industry and government were concerned and saw a need to improve the performance of these rigs.

API and other industry representatives met with Department of the Interior and Coast Guard officials in November to discuss the rig mooring experience and begin a cooperative effort to identify and implement improvements. Participants included offshore producers, drilling operators and other upstream trade associations.

At the meeting, MMS and the Coast Guard requested the industry improve the station-keeping performance of drilling rigs during hurricanes --- to reduce the risk of rigs breaking their moorings and drifting. Since the November meeting, a joint industry

Committee on Hurricane Response has been leading an effort with API to develop several new recommended practices (RPs) for this year's hurricane season.

In recent weeks, API has published the first two of these RPs. One covers "jackups" which are mobile offshore units (MODUs) with a buoyant hull and legs that can be moved up or down relative to the hull and the seafloor. The other covers floating MODUs, which are drilling rigs that can be moved between drilling locations and moored (anchored) in place during operations.

Both of these RPs can be obtained free of charge by going to API's website at www.api.org/pubs. Both are interim measures and should be seen as works in progress. Once our longer-term efforts are completed, the interim RPs will be withdrawn. Longer-term industry studies are underway to assess mooring systems and station-keeping technology, as well as meteorological and oceanographic conditions during hurricanes in the Gulf.

-- Hurricane Preparedness: Refineries and Pipelines

During last year's hurricanes, refinery and pipeline operations were safely shut down as storms approached and then safely restarted. The challenges presented by Katrina and Rita required companies to be as flexible as possible and think "out of the box." For example, one refinery shipped crude via vessel when pipelines did not have power, and refineries operated as terminals to minimize supply disruptions.

Based on this experience, the industry is working with authorities to clarify priorities for generators and power restoration; ensure industry employees can gain access to critical facilities in restricted areas; and provide security so fuel is available for emergency vehicles. Companies are also making their own arrangements to insure equipment and maintenance supplies being stockpiled and pre-positioned. Awareness of potential problems like scarce materials or workers, permit issues and system bottlenecks has been increased.

Refineries are complex. It takes more than a flip of a switch to get a refinery back up and running. In a normal situation, once the decision has been made that it is safe to start-up the refinery, it can take several days before the facility is back to full operating levels. This is because the process units and the associated equipment must be returned to operations in a staged manner to ensure a safe and successful start-up.

Once a hurricane leaves the region, refinery managers assess what impact the hurricane had on their facilities. If any damage has occurred, repairs will need to be made before the refinery can be brought back online. Also, any flooding – a potentially significant problem – will need to be dealt with before restarting the refinery.

In the case of a start-up following a hurricane, other factors could cause further delay. These factors include the availability of crude oil, electricity to run the plant, and water used for cooling the process units.

Refineries have been prepared with hurricane preparedness and response plans for a very long time. Safety for neighboring communities and employees is a top priority. It takes a few days to shut down a refinery, and the better job done at shutdown, the more likely will be a smooth and safe startup.

Commercial electric power availability is also essential for pipeline operations. The ability of emergency response officials at the federal, state and local levels to facilitate, coordinate and prioritize the response of electric power utilities is essential. In-place backup generation equipment would be just as vulnerable as the local utility to major storm or attack, costly and difficult to accommodate in pipeline facilities.

The lack of reliable telecommunications was a major issue in slowing pipeline response to last year's storms. In many cases land lines were out and cell coverage was spotty at best. Even when land lines were available, A/C-powered phones were useless. Satellite communication worked well but had its limitations. The number of units available was often limited and proper setup took some time. Locations for satellite usage were at times limited. Loss of computing services removed email as a viable communications tool, except in some instances where personal data assistants (blackberries, cell phone text messaging, etc.) allowed personnel to keep in touch.

Moving forward into the 2006 hurricane season, companies are reviewing the communication needs identified in their facility response plans so that any gaps can be addressed and redundant communications systems can be established to better insure that communication loss is kept to a minimum, if not avoided, during an event.

Through our efforts to bring government and industry together to discuss what worked and what needed improvement, it became clear that strategies to diversify communications options, including the use of all modes of voice and data communications, priority access to telephone services, and even the acquisition of cell phones with out-of-area telephone numbers could improve telecommunications.

The federal government should be commended on how quickly it was able to learn from Hurricane Katrina. For instance, more clearly delineated contact points within the federal government made Rita response easier than Katrina response – there were fewer duplicate requests for updates and better use of designated contacts. This also made it easier to get federal help when needed as we had much improved channels into the government.

-- Hurricane Preparedness: Service Stations

At the retail level, companies are working with their service station dealers to establish employee “call trees” and alternate contact methods to ensure adequate staffing of retail outlets during hurricanes. In addition, routes for refueling stations on evacuation routes are being prioritized and alternative drivers for terminals (with proper certification) are being identified. Finally, consideration is being given to such possible, additional steps as separate skid tanks for emergency service vehicles and having duplicate keys for all building and trucks.

Following last year's hurricanes, some advocated requiring the placement of electrical generators in petroleum terminals and retail stations for backup use in future hurricanes.

API is opposed to imposing generator requirements. Some stations do not have a sufficiently large footprint to accommodate setback requirements for generators – particularly in large population centers where there is a premium for land. Moreover, generators are very expensive to purchase or rent, which would place a heavy cost burden on dealers. Smaller generators or other solutions can increase the risks of handling fuels and create an emergency within an emergency.

Generators installed permanently at a station can be damaged during a storm rendering the generator useless. Furthermore, generators require diesel fuel that the majority of stations do not carry – this creates competition for diesel and diesel delivery trucks required by emergency responders and critical care facilities (for example, hospitals and nursing homes).

-- Hurricane Preparedness: Industry Security

Providing security in the aftermath of a hurricane is particularly important and difficult. In the aftermath of Katrina and Rita, the ranks of local law enforcement were significantly depleted as officers elected to look after their families, which in many instances meant leaving the area. There are, of course, a great number of other interests competing with the need to protect critical infrastructure. Nevertheless, refineries and other similar infrastructure are at an elevated risk during a hurricane emergency and

require protection by local law enforcement, state police, National Guard, or other entities that can fill the void.

In the aftermath of a hurricane, companies' priorities are to ensure the safety of their employees, gain access to the facility to conduct an assessment of the damage, provide security and control access to the site, facilitate any immediate safety and/or environmental remediation, undertake cleanup, make repairs of critical operating elements, and initiate restart of the facility.

Conducting an assessment of the site necessitates first getting an assessment of the damaged area and then, when that area has been determined to be safe, obtaining immediate access to the site becomes critical. Preliminary assessment of the damaged areas via satellite imagery and high-resolution, low-altitude fly-overs is extremely valuable as companies do not want to send responders and other employees into unsafe areas. Again, employee safety is a company's paramount concern, and very little will be accomplished if crews are sent into impacted areas and become part of the casualty list rather than part of the solution to getting operations up and running.

Getting imagery of an impacted facility and the surrounding area as early as possible will help shape company decisions on deploying response and rescue teams. In some instances, during the 2005 hurricane response, public sector personnel attempted to restrict access based upon the need to maintain law and order. In the aftermath of Katrina and Rita, roadblocks and other impediments were established to ensure that only first

responders were provided access. However, this did pose some challenges for companies attempting to transport necessary supplies via ground transport. Generally, these challenges involved coordinating with law enforcement officials to obtain permits authorizing access into affected areas.

One concern was that emergency electrical generators, gas, food, and other necessities that companies were attempting to deliver to their locations would be seized by local agencies. Companies made special arrangements for materials to be carried in convoys comprising several vehicles and escorted by local law enforcement.

As we prepare for this year's hurricane season, the industry is keeping in mind lessons from the Katrina/Rita experience, including the following:

- Housing for rescue, response and facility and infrastructure repair personnel in the storm-affected areas can be a major bottleneck to beginning recovery operations.
- Development of a formal communications channel into governmental response organizations/departments is extremely helpful.
- Communication and coordination between agencies at the federal, state and local levels is imperative for an efficient and effective hurricane response.
- Development of an established process to expedite access to those areas shut down after a major disaster to begin rebuilding of critical industries is needed.

IV. CONCLUSION

API and the industry will continue to work closely with government agencies to learn from the recent hurricane experiences. API's publication of the first two interim recommended practices for mobile offshore rigs and our sponsorship of and participation in hurricane preparedness meetings and conferences illustrate how the industry is moving ahead rapidly to draw upon our experiences of last summer and be better prepared as the next hurricane season begins. Working together, industry and government can meet the challenges we face.